



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,296	09/17/2003	Toshiki Hirano	HSJ920030230US1	4582
35987	7590	11/23/2004	EXAMINER	
JOSEPH P. CURTIN 1469 N.W. MORGAN LANE PORTLAND, OR 97229			FIGUEROA, NATALIA	
			ART UNIT	PAPER NUMBER
			2651	

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/664,296	HIRANO ET AL.
	Examiner	Art Unit
	Natalia Figueroa	2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-22 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/17/2003.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: ____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on September 17, 2003 (09/17/2003) is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

2. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

3. Claims 1-22 provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-22 of copending Application No. 10/664,295. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented. Although the preamble set forth in each of the applications is not identical with each other the body of the claims is identical and falls under the category of identical claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde (US Statutory Invention Registration H1424) and Boutaghout et al (JP 07-141804), hereinafter Boutaghout.

Regarding claim 1, Budde discloses a disk drive (abstract and figs. 1-9), comprising a suspension load beam having a dimple (figs. 1-9 and col. 4, lines 2-6); and a laminated flexure coupled to the suspension load beam, the flexure having a surface adapted to receive a slider and a surface adapted to contact the dimple (figs. 1-9 and col. 4, lines 20-23). Budde fails to explicitly teach the flexure including a head-disk interaction sensor outputting a sensor signal when the slider contacts a disk of the disk drive.

However, Boutaghout disclose such in the (abstract and fig. 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method as disclosed by Budde with the above teachings from Boutaghout to include sensing means that would provide indication of a disk-head interference, hence avoiding data corruption or loss. Also, the location set forth would have been obvious to one of ordinary skill in the art at

the time the invention was made, since the location of the sensor is merely a designer's choice according to the disks set parameters.

Regarding claim 2, Boutaghou further discloses that the head-disk interaction sensor is an accelerometer sensing an acceleration of the flexure generated by the slider contacting the disk of the disk drive (abstract and fig. 2).

7. Claims 13-17, 19 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budde and Kasiraj et al (USPN 5,777,815), hereinafter Kasiraj.

Regarding claim 13, Budde is relied upon for the same reasons of rejection as stated above. Budde fails to explicitly teach a write-inhibit circuit responsive to the sensor signal by inhibiting a write operation of the disk drive.

However, Kasiraj discloses such in the (abstract, fig. 1, 58 and col. 6, lines 36-42). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method as disclosed by Budde with the above teachings from Kasiraj to include a write-inhibit signal, hence stopping the writing of data on the disk as long as there is head-disk interference or shock, therefore avoiding the corruption or loss of data.

Regarding claim 14, the combination of Budde and Kasiraj is relied upon for the same reasons of rejection as stated above. Kasiraj further discloses that the write-inhibit circuit includes a filter circuit conditioning the sensor signal (abstract, fig. 1 and col. 7, lines 17-28).

Regarding claim 15, the combination of Budde and Kasiraj is relied upon for the same reasons of rejection as stated above. Kasiraj further discloses that the filter circuit is a low-pass filter having a passband that is greater than about 20 kHz (or frequency of approximately 20 MHz, col. 7, lines 17-25).

Regarding claim 16, the combination of Budde and Kasiraj is relied upon for the same reasons of rejection as stated above. Kasiraj further discloses that the filter circuit is a high-pass filter having a passband that is less than about 2 MHz (or frequency of approximately 100 MHz, col. 7, lines 27-29).

Regarding claim 17, the combination of Budde and Kasiraj is relied upon for the same reasons of rejection as stated above. Kasiraj further discloses that the he filter circuit is a bandpass filter having a passband between about 20 kHz and about 2 MHz (or the combination or manipulation of both a low-pass and a high-pass filter for a frequency range of approximately 20 MHz and 100 MHz, col. 7, lines 17-29). Furthermore, it is considered that the optimization of arrange holds no patentable weight because it is not inventive to discover the optimum or workable ranges by routine experimentation (see *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)).

Regarding claims 19 and 21-22, the combination of Budde and Kasiraj is relied upon for the same reasons of rejection as stated above. Claims 19 and 21-22 have limitations similar to those treated in the above rejections in claims 15-17, and are met by the references as discussed above.

Allowable Subject Matter

8. Claims 3-12, 18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These claims would also have to overcome rejections under 35 U.S.C. 101.

9. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 3 and 5, the prior art of record, and in particular Budde (US SIR No. H1424), fails to teach or suggest a pressure sensor sensing a pressure between the flexure and the dimple generated by the slider contacting the disk of the disk drive.

Regarding claims 18 and 20, the prior art of record, and in particular Budde (US SIR No. H1424), fails to teach or suggest a bandpass filter having a passband corresponding to about a pitch frequency and a bending mode frequency of a body of the slider.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents are cited to further show the state of the art with respect to head-disk interaction.

- a) IBM Technical Disclosure Bulletin (NN9610131): Discloses write-inhibiting signals and accelerometers.
- b) Imaino et al (USPN 5,929,326): Discloses a glide sensor integrated in a disk suspension.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Figueroa whose telephone number is (703) 305-1260. The examiner can normally be reached on Monday - Thursday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh N. Tran can be reached on (703) 305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NFM

Sinh D
SINH TRAN
PRIMARY EXAMINER